



National Transportation Safety Board Aviation Accident Final Report

Location:	ORLANDO, FL	Accident Number:	ATL98LA078
Date & Time:	05/23/1998, 0330 EDT	Registration:	N100DL
Aircraft:	Learjet 24-B	Aircraft Damage:	Substantial
Defining Event:		Injuries:	6 None
Flight Conducted Under:	Part 135: Air Taxi & Commuter - Non-scheduled - Air Medical (Organ Transport)		

Analysis

During landing roll, the airplanes normal braking system failed as a result of hydraulic fluid leak(s). At the pilot's request, deployment of the drag chute and application of the emergency braking system was performed by the first officer. According to the first officer, application of the emergency brakes caused the airplane to yaw. The first officer then pulled up on the emergency brakes handle followed by re-application of braking pressure. This action took place several times during the landing roll. Gates' Learjet Flight Training Manual (Page 105) states, 'In using the emergency brake lever, slow steady downward pressure is required. Each time the lever is allowed to return upward to the normal position, nitrogen is evacuated overboard. Brace your hand so you will not allow the lever to move up and down inadvertently on a bumpy runway.' The airplane overran the end of the runway and collided with the Instrument Landing System back course antennae.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The first officer's failure to perform proper emergency braking procedures.

Findings

Occurrence #1: OVERRUN

Phase of Operation: LANDING - ROLL

Findings

1. (C) LANDING GEAR,NORMAL BRAKE SYSTEM - FAILURE
 2. LANDING GEAR,EMERGENCY BRAKE SYSTEM - ACTIVATED
 3. (C) PROCEDURE INADEQUATE - COPILOT/SECOND PILOT
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Occurrence #2: ON GROUND/WATER COLLISION WITH OBJECT

Phase of Operation: LANDING - ROLL

Findings

4. OBJECT - ANTENNA

Factual Information

On May 23, 1998, about 0330 eastern daylight time, a Learjet 24-B, N100DL, overran the end of runway 07 on landing roll at Orlando Executive Airport (ORL) in Orlando, Florida. The airplane was owned by AJM Airplane Company and operated by Panther Aviation for the purpose of transporting a human organ transplant team. The flight was conducted under Title 14 CFR Part 135, and instrument flight rules. Visual meteorological conditions prevailed and an IFR flight plan was filed. The Airline Transport Pilot (ATP), first officer and four passengers were not injured and the airplane received substantial damage. The on-demand non-scheduled passenger flight originated in Miami, Florida at 0230.

According to the pilot, while on approach to ORL, at 1500 feet MSL, he asked for "full flaps" and noticed that the flap indicator had not moved from the 20 degree position. According to the pilot, the airplane touched down on the first 1000 feet of runway at approximately 115 knots, spoilers were extended and the engines were reversed. The pilot stated, "At 80 knots I put pressure on the brake pedals and they went to the floor with no results." At the pilots' request, the first officer deployed the drag chute followed by application of the emergency brakes. The first officer stated, "Upon downward movement of the emergency brake handle, he felt the airplane yaw. He then pulled up on the handle, evacuating the pressure and negating any braking action." This action took place several times during the landing roll. Gates' Learjet Flight Training Manual (Page 105) states, "In using the emergency brake lever, slow steady downward pressure is required. Each time the lever is allowed to return upward to the normal position, nitrogen is evacuated overboard. Brace your hand so you will not allow the lever to move up and down inadvertently on a bumpy runway." After colliding with the Instrument Landing System (ILS) back course antennae for runway 25, the airplane was evacuated.

According to the FAA inspector who visited the site, the right wing main attachment brackets were broken on impact and the wing was pushed rearward approximately 3 inches in the fuselage. Damage to several fuel and hydraulic lines in the wing area was noted. Inspector's noted evidence of hydraulic leak(s) in the aft fuselage, outside bottom of the fuselage and on the drag chute. Sources of leak(s) were not ascertained due to the damage incurred by airplane impact. A possible leak from the front lower brake puck on the right inboard brake was evident. Inspector's activated the emergency braking system several times with no discrepancies and no previous abnormalities in the system noted. No identifiable skid marks from the airplane could be found on the runway or the over run area.

Pilot Information

Certificate:	Airline Transport; Flight Engineer	Age:	59, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	
Medical Certification:	Class 1 Valid Medical--w/ waivers/lim.	Last FAA Medical Exam:	11/24/1997
Occupational Pilot:	Last Flight Review or Equivalent:		
Flight Time:	18395 hours (Total, all aircraft), 318 hours (Total, this make and model), 10248 hours (Pilot In Command, all aircraft), 125 hours (Last 90 days, all aircraft), 44 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Learjet	Registration:	N100DL
Model/Series:	24-B 24-B	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	201
Landing Gear Type:	Retractable - Tricycle	Seats:	8
Date/Type of Last Inspection:	12/20/1997, AAIP	Certified Max Gross Wt.:	13500 lbs
Time Since Last Inspection:		Engines:	2 Turbo Jet
Airframe Total Time:	8138 Hours	Engine Manufacturer:	GE
ELT:	Installed, not activated	Engine Model/Series:	CJ610-6
Registered Owner:	AJM AIRPLANE COMPANY	Rated Power:	2950 lbs
Operator:	PANTHER AVIATION	Operating Certificate(s) Held:	On-demand Air Taxi (135)
Operator Does Business As:		Operator Designator Code:	FOVA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Night/Bright
Observation Facility, Elevation:	ORL, 113 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	0350 EDT	Direction from Accident Site:	0°
Lowest Cloud Condition:	Clear / 0 ft agl	Visibility	6 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	Variable	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	23° C / 21° C
Precipitation and Obscuration:			
Departure Point:	MIAMI, FL (MIA)	Type of Flight Plan Filed:	IFR
Destination:	(ORL)	Type of Clearance:	IFR
Departure Time:	0230 EDT	Type of Airspace:	Class C

Airport Information

Airport:	ORLANDO EXECUTIVE AIRPORT (ORL)	Runway Surface Type:	Asphalt
Airport Elevation:	113 ft	Runway Surface Condition:	Dry
Runway Used:	7	IFR Approach:	Localizer Only; Visual
Runway Length/Width:	6003 ft / 150 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:	4 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	6 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	BUTCH WILSON	Report Date:	07/02/1999
Additional Participating Persons:	MIKE CURTIS SCOTT M GRABON		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinquiry@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).